Important Questions of Optical Communication

1. Describe with the aid of suitable diagram the mechanism giving emission of light from LED. Discuss the properties of LED in relation to its use as an optical source for communication.
2. Explain with the structure of surface emitting and edge emitting LEDs.
3. What is internal quantum efficiency of LED? Deduce the expression of internal quantum efficiency for LED.
4. Explain modulation capability of LED.
5. Write about the radiation pattern of LED.
6. Explain the principle of laser action. Explain the spontaneous and stimulated emission process.
7. What is population inversion in laser?
8. Give the necessary conditions for lasing threshold.
9. Describe the expression for lasing condition and hence for optical gain.
10. Explain different structures of laser diode.
11. Explain the structure of –
    a. Fabry-Perot Resonator
    b. DFB laser diode
12. What is single mode laser? Explain.
13. Explain modulation techniques of laser diode.
14. Explain the power current characteristics of laser diode.
15. Compare the parameters of LED and LASER.